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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,325	02/21/2001	Paul Andrew Evans	36-1410	5030

7590 02/09/2005

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EXAMINER	
LIEN, TAN	
ART UNIT	**PAPER NUMBER**
2141	

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/763,325	EVANS ET AL.	
	Examiner	Art Unit	
	Tan Lien	2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 February 2001*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 September 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-12 are presented for examination.

Claims 1 and 9 are amended.

Claims 2-8 and 10-12 are previously presented or original.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in Application No. 98307623.3, filed on 09/18/1998.

Specification

- The new title is acceptable; therefore, the Examiner withdraws the objection.
- The new Abstract is acceptable; therefore, the Examiner withdraws the objection.
- Claim 1 is now in proper form. The Examiner withdraws the objection.

Response to Amendment

Applicant's arguments filed 9/10/2004 have been fully considered but they are not persuasive.

In the Remarks, Applicant argued that

(A) Virgile fails to disclose "a) obtaining a list of receiver identifiers, said list corresponding to the set of recipients to which said data block is to be sent; and b) examining said one or more directories to find a multicast-address corresponding to said list of receiver identifiers obtained in step a)."

As to point (A), Virgile does teach step a) and step b) stated above. In FIG. 4 and column 7 lines 50-67 through column 8 lines 1-12, Virgile teaches multiple multicast groups and in each multicast group, there are hosts subscribed to the group with various interests such as Audio group, Audio-Video group, Video group, or any other groups with various interests such as golf. All these information are updated to directories structured in a table format for forwarding multicast packets. When multicast packets are sent out, the device has to find out the multicast address in the index field to find corresponding group of hosts in that multicast address in order to send it to the receiver with receiver identifiers listed in the LIST FIELD.

(B) Virgile fails to disclose "examining said one or more directories to find a multicast-address corresponding to said list of receiver identifiers obtained in step a).

As to point (B), it would be unconventional to not examine the lookup directories in each row in the multicast forwarding table to find a multicast-address indexed in the INDEX FIELD where the multicast-address corresponds to list of hosts. For example, if a user wants to post a video file, the user has to post it to a group

and that group has a multicast address. To the user, he/she only knows the group through its group name. That group name has to have a multicast address associated with the group, therefore, the software will lookup the corresponding multicast address and consequently the multicast address will send to the hosts listed in the group.

(C) The Office Action has incorrectly identified features from different embodiments of Virgile and pieced them together to allegedly arrive at the claimed invention.

As to point (C), the Examiner has correctly used the prior art to reject the claimed invention. In column 6 lines 35-50, FIG. 5 and FIG. 6 are not methods of different embodiments but functionalities of the Virgile's invention as stated by "according to an embodiment of the present invention." These methods are operating within the same embodiment. FIG. 5 shows a process of adding or deleting members of a group from the forwarding table, and FIG. 6 shows a process of operating the packet. These processes are not variations of the invention but are necessary functionalities of Virgile's invention. How can Virgile's invention work without a process of updating the table?

(D) Virgile only describes how data blocks with an existing multicast-address may be selectively routed in a network rather than how a multicast-address may be

obtained and then subsequently used for addressing and transmitting a data block.

As to point (D), the Applicant only claims that the transmitter obtains a list of receiver identifiers wherein the list corresponds to the set of recipients, which Virgile's invention clearly reads on and a lot of other inventions read on.

(E) FIG. 4 is merely a table and does not disclose any specific steps as defined in claim 3, specifically "unifying said selected plurality of lists to find a unified list of receiver identifiers."

As to point (E), the Applicant merely claimed unifying the lists of receivers without specifically claiming how it is unified. One of ordinary skill in the art at the time of the invention would be able to look at FIG. 4 and come to a conclusion that since host h109 is in multiple groups, the messages from different groups that come to h109 are unified in a connection and forwarded to the same receiver via a unified I/O interface.

(F) Virgile fails to disclose a plurality of groups directories as defined and the table itself can therefore only represent a single directory.

As to point (F), it is very untrue that a single table can only represent a directory. In general, a table can represent a very complicated structure such as trees in computer science or directory structures. Specifically in FIG. 4, each row

contains hosts that subscribe to a group with a common interest, therefore, the row is a directory listing the hosts with a common interest.

(G) Claims 1, 3, 7-9 and 11 are not anticipated by Virgile and requests that the rejection of these claims under 35 USC 102(b) be withdrawn.
As to point (G), as long as the claims are so broad and generic which describes standard multicast operations operations, the rejections stand.

(H) there is no suggestion in Takiyasu of "analysing said indications to generate a list of receiver identifiers ..." and the operation described in the Takiyasu is a standard multicast operation.
As to point (H), what is the significant of analysing the failed indications to regenerate the list of receiver identifiers for retransmission? When transmission of message to recipients indicate a failure in transmission, the network protocol has to analyze it before retransmit the messages to the list of failed recipients. This is something that is very obvious and not the key feature to the invention. And the multicast operation is not just a standard multicast operation, it is an improved multicast operation (col. 2 lines 15-45 Takiyasu).

(I) in Claims 4-6 and 10, Virgile and Reams are non-analogous art and combination is improperly based on hindsight.

As to point (I), Virgile and Reams are in analogous art and the combination is not based on hindsight. Examiner has pointed out the motivation to combine and Reams is directed towards cable or TV broadcast information which is basically data with protocols on each layer of the network sent out from one station to a group of individuals tuned in or subscribed to the channel. Likewise, multicast information is a data packet with protocol information at each layer of the network sent out from one station to a group of individuals subscribed to the multicast channel, which is the case in Virgile. Both Virgile and Reams's data contain layer protocol information.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim(s) 1, 3,7-9, and 11 is/are rejected under 35 U.S.C. 102(b) as being anticipated by Virgile (US Patent 5,608,726).

Claim(s) 1, 9: Virgile discloses a method of operating a transmitter to transmit a data block to a plurality of recipients selected from a plurality of receivers connected to said

transmitter via a multicast-capable network, wherein said transmitter has access to one or more directories storing a plurality of lists of receiver identifiers and a multicast-address suitable for use in said multicast-capable network corresponding to each of said lists; said method comprising the steps of:

a) obtaining a list of receiver identifiers, (FIG. 5 and col. 8, lines 13-52; wherein the process in FIG. 5 shows how to obtain a list of hosts via a leave or join host group packet), said list corresponding to the set of recipients to which said data block is to be sent (FIG. 4 and col. 5, lines 49-53; wherein the receiver identifiers are the hosts {h with number} and set of recipients is listed in each row of the LIST FIELD column);

b) examining said one or more directories to find a multicast address corresponding to the list of receiver identifiers obtained in step a) (col. 10, lines 43-57; wherein each list of host is a directory and each host is a receiver identifier. The processor uses the multicast destination address as an index to retrieve a corresponding entry from the multicast forwarding table {col. 10, line 52-54}, so the processor must have examine the directory in the multicast forwarding table to find a multicast address corresponding to the list of hosts);

c) addressing said data block to said multicast address found in step b) (col. 5, lines 37-65; wherein the multicast packet is the data block and multicast

forwarding table is addressing all the hosts that want to be in the multicast group);

d) transmitting said data block over said multicast-capable network (Abstract; wherein the multicast packet are transmitted in a multicast-capable network);

Claim(s) 3: Virgile discloses a method according to claim 1 wherein said obtaining step involves:

a) determining that a general data block is to be sent to recipients included in one or more of a selected plurality of said lists (FIG. 4 shows host h109 as one of the recipients included in list 216, 236, 266, and 276); and

b) unifying said selected plurality of lists to find a unified list of receiver identifiers (FIG. 4 shows the multicast forwarding table unifying plurality of lists of hosts).

Claim(s) 7: Virgile discloses a method according to claim 1 wherein

said transmitter has access to a plurality of group directories for respective groups of receivers (FIG. 4 shows that the bridge has at least read access to the multicast forwarding table in order to route packets to the appropriate destinations. Each row entry is a directory group falling into a multicast group which has hosts as receivers in the list field).

Claim(s) 8: Virgile discloses a method according to claim 1 wherein

the format of said multicast address is in accordance with the Internet Protocol suite (col. 1, lines 36-42; Looking at FIG. 1, as the data block travels from a host in one branch of the hierarchical network to multicast destinations in other branches of the hierarchical network, the data block has to go across the backbone or even the WAN, and the communications among the routers on the WAN and on the backbone network is in accordance with the IP suite).

Claim(s) 11: Virgile discloses a program storage device readable by a processing apparatus, said device embodying a program of instructions executable by the processing apparatus to perform method steps for transmitting a data block over a network to a set of recipients selected from a plurality of receivers, said method steps comprising steps according to claim 1 (Since Virgile teaches the method performing the steps and limitations in claim 1, then it is inherent that there must be a storage device that stores the program in the network node).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim(s) 2 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Virgile as applied to claim 1 above, and further in view of Takiyasu et al (US Patent 4,792,947), hereinafter referred to as Takiyasu.

Claim(s) 2: Virgile discloses a method according to claim 1 and suggest a retransmission of some of the packets but fails to explicitly state the obtaining step comprises:

a) receiving one or more indications that an earlier data block addressed to a selected set of receivers was not successfully received by one or more of said set of receivers; and

b) analyzing said indications to generate a list of receiver identifiers, each receiver identifier in said list identifying a recipient that did not successfully receive said earlier data block.

Takiyasu, however, discloses receiving indications that an earlier data block addressed to a selected set of receivers was not successfully received by a set of receivers (col. 7, lines 2-7 of Takiyasu; wherein the indications are the failures to return responses to the sender node in a predefined period of time) and analyzing the indications to generate a list of receiver identifiers which did not successfully receive the data block (col. 7, lines 2-7 of Takiyasu; wherein after a predefined period of time the sender node will generate a list of fail nodes to retransmit the packets). It would have been obvious to one of ordinary skill in the

art at the time of the invention to combine Virgile's method of multicasting with Takiyasu's method of obtaining and analyzing the indications of failure, for the advantage of carrying out delivery confirmation that a transmitting node is informed of success or failure in accepting information at a receiving node in multi-address communication (col. 2 lines 15-45 Takiyasu).

Claim(s) 4-6, 10 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Virgile as applied to claim 1 above, and further in view of Reams (US Patent 5,907,793).

Claim(s) 4, 10: Virgile discloses a method according to claim(s) 1 and 9 above, and teaches

a packet header containing a multicast destination address and transmitter's ability to write the multicast destination address into the packet header (col. 11, lines 33-37) and a list of receiver identifiers associated to a multicast group indexed in the index field column of FIG. 4 of Virgile. Virgile fails to disclose finding a type identifier associated with said data block, and examining said type data. Reams, however, discloses type identifier associated with data block and examining the type (col. 18, lines 40-48 of Reams; wherein the type identifier is the type code falling under a subject category in the data packet header. In order to determine the type code, a device must be able to examine the type field). It would be obvious to one of ordinary skill at the time of the invention to modify Virgile's teaching of packet headers with Reams' teaching of type identifiers in

the packet header, for the advantage of discriminate among the type of interest listing or subjects the packet is associated with (col. 18, lines 39-48 of Reams).

Claim(s) 5: Virgile discloses a method according to claim 4, and

in the rejection of claim 4, Reams discloses the type to be a subject type. Therefore, it is rejected under the same basis as claim 4.

Claim(s) 6: Virgile discloses a method according to claim 4

and further teaches extracting a information from a data block received from a transmitter (col. 11, lines 33-37 of Virgile; Virgile teaches writing a multicast address into a packet header. It is known to one of ordinary skill in the art at the time of the invention that when a data block traverse from one network node to another, the node extracts headers if that data block is going up the protocol stack and append header information if the data block is going down the protocol stack. The data block goes up and down the protocol stack as it hops from one node to another, thus, appending and extracting header information as it hops across the network). Virgile fails to teach extracting a type identifier from a data block. Reams, however, teaches about a type code or identifier in a packet header of a data block (col. 18, lines 42-47 of Reams). In Reams' teaching, since the type code for the subject category is in the packet header then it is obvious that the limitation of claim 6 reads on the combination. It is obvious to one of ordinary skill in the art at the time of the invention to use Virgile's

extracting method to extract Reams' type code of the packet header. The reason why Virgile would want to do so is because Virgile wants to examine the type of subject category the type code belongs in (col. 18, lines 42-47).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim(s) 12 is/are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim(s) 12: What is being claimed here?

If a computer program comprising the steps in claim 1, then the claim is nonstatutory. The claim 12 is a software per se and therefore is not tangibly embodied.

If a medium embodying a computer program is claimed, then the claim is no different from claim 11.

If a program containing the steps of claim 1 executed by a computer is claimed, then the claim is no different from claim 1. Claim 1 is a method that is executed by some sort of computer.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Tan Lien whose telephone number is (703) 305-6018. The examiner can normally be reached on Monday-Thursday from 8:30am to 6pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia, can be reached at (703) 305-4003. The fax phone number for this Group is (703) 305-3718.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [tan.lien@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER